



PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Tom Osterheld, et al.

Art Unit: 3723

Serial No.: 08/856,948

Examiner: T. Eley

Filed : 5/15/97

Title : POLISHING PAD HAVING A GROOVED PATTERN FOR USE IN A  
CHEMICAL MECHANICAL POLISHING SYSTEM

#7/Response  
12/8/98  
EB.

Assistant Commissioner for Patents  
Washington, DC 20231

RESPONSE

In response to the Examiner's action mailed May 15, 1998, please consider the following remarks.

Claims 1-13 and 15 stand rejected as obvious over either U.S. Patent No. 5,216,843 ("Breivogel") or U.S. Patent No. 5,578,362 ("Reinhardt"), without a secondary reference. Claim 14 stands rejected as obvious over Breivogel or Reinhardt in view of either U.S. Patent No. 5,190,568 ("Tselesin") or 5,131,190 ("Gougoutan").

Breivogel teaches circular grooves with a depth of 300 microns, i.e., 0.012 inches (see FIG. 6 of Breivogel). Reinhardt teaches circular grooves with a depth of 0.014 inches (see column 9, lines 46-50 of Reinhardt). In contrast, Applicants' claims call for a polishing surface with grooves having a depth of at least about 0.02 inches. As discussed in the specification, the polishing pad has grooves which are deeper in comparison to than those used in the past (see page 10, lines 26-28).

The Examiner acknowledges that the specific dimension of the polishing pad are not disclosed by the references. However, the Examiner argues that the dimensions would be obvious, on the grounds that discovering an optimum value of a

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I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

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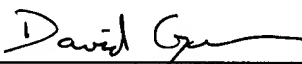
"result-effective variable" involves only routine skill in the art. However, in order for the Examiner to characterize the determination of optimal ranges to be routine experimentation, the prior art must teach that the parameter in question is recognized as a result-effective variable. See MPEP 2144.05(b). It is Applicants' specification that teaches selection of the groove depth based on the resulting lifetime, cost and flexibility of the polishing pad (see page 11, lines 17-29 and page 13, lines 22-27). In contrast, neither Breivogel, Reinhardt nor Tselesin contain discussions that would indicate that the depth of the grooves is a result-effective variable. The Examiner's argument is an exercise of hindsight. Therefore, claims 1, 13-15, and the claims depending therefrom should be allowable.

Applicant submits that all of the claims are now in condition for allowance, which action is requested. Filed herewith is a Petition for Automatic Extension with the required fee.

Please charge any additional fees, or make any credits, to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 11/13/98

  
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